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Interregional migration of human creative capital: the case of "Bohemian graduates"

Abstract

Human capital endowment has long been perceived to be of paramount importance to regional growth and development. In recent years, there also has been a widely held belief that creativity, going hand in hand with innovation and knowledge creation, readily translates into regional competitiveness. Attracting quality human capital and cultivating creative industry/class have been given an unprecedented level of significance in regional policies. As a result of this, understanding the factors determining the migration behaviour of graduates – and especially graduates in creative disciplines - has clear implications for policy makers. In addressing these issues and advancing our understanding of the relationship between creativity and mobility in human capital, this study provides the first empirical analysis of the role played by graduates' subject background (i.e. creative vs. non-creative subjects) in influencing their migration choice in the UK. Our data employed in this paper primarily draw on the Destinations of Leavers from Higher Education Survey (DLHE)

2006/07, collected by the UK's Higher Education Statistic Agency. Graduates are classified into five migration categories (going from the most migratory group, i.e. repeat migrants, to the least migratory, i.e. non migrants) based on their migration choices from domicile to university and then onto workplace. A multinomial logit model is then used to assess the probability that Bohemian graduates belong to the different migration categories after controlling for the effect of other personal, course and job characteristics.

Our results show that graduates from disciplines such as business/management and more importantly engineering/technology are more migratory and more likely to be repeat migrants and land higher paid jobs, while graduates from creative arts, education or law are less mobile and, on average, earn less.

1. Introduction

Ever since the emergence of the "new" growth theories in the 1980s, it has become clear that knowledge is a crucial factor to ensure national and regional self-sustaining economic growth. As Lucas (1988) pointed out in his famous model of endogenous growth, unlike the traditional production inputs, knowledge is not subject to the "law of diminishing returns". It is a non-rivalrous good which can be shared and re-utilised and hence accumulated with almost no limits. It also has the enviable property of producing externalities which make other traditional inputs (i.e., labour and capital) more productive. Because of this, the presence of high-human capital individuals and knowledge workers in a geographical area plays a fundamental role to its economic success.

However, while *in loco* production of high-human capital individuals is of paramount importance (e.g., via the creation of new educational facilities or training programs),

attracting them from other areas - thanks to regional factors that favour in-migration – is at least as important. As pointed out by Sjaastad (1962) in the so-called "human capital migration theory", highly skilled individuals are more likely to benefit from migration and hence tend to be more mobile.

A recent "twist" in the concept of human capital and knowledge is the idea of "creative class" made popular by Richard Florida in his book *The Rise of the Creative Class* (2002c). While the human capital concept is strictly connected with the educational attainment of people (Becker, 1964), the creative class concept relates to a person's occupation. As such, human capital– normally measured by years of schooling - is embedded in each individual and can be seen more as a "stock", while the creative class is a more "fluid" concept. People can enter or exit a creative occupation at any point in time; therefore, the creative class resembles a flow rather than a stock.

What is common to both the traditional human capital theory and the creative class notion is the assumption that highly talented people are more mobile than the rest of the population and that retaining and attracting them is pivotal for economic growth. In fact, in Florida's words today, the terms of competition revolve around a central axis: a nation's "ability to mobilize, attract and retain human creative talent" (Florida, 2005, p.6).

Surprisingly, only a few studies (Hansen and Niedomysl, 2009 and Borén and Young, 2013 for Sweden; Bennett, 2010 and Verdich, 2010 for Western Australia and Tasmania respectively) focus specifically on the mobility of creative workers and how their migration propensity differs from other types of workers. It is normally *assumed* - but not proven - that creative workers are more mobile and the focus of the majority of contributions is their location patterns and the factors attracting them (especially the role of jobs vs. amenities, see Scott, 2010).

While migration and attraction of “talented” individuals is one of the cornerstones of the creative class theory (Florida, 2002c), another key aspect of this body of literature (Florida, 2002a, b, 2003) is the idea that creative people attract other creative people. Places with the right “people climate”, or in other words with a rich and diverse cultural scene - determined by the number of people employed in core cultural occupations or “Bohemians” – signal an environment or milieu that attracts other types of talented or high human capitals individuals. However, there is very little evidence on the impact of “people climate” on mobility and several authors have criticized this idea. Peck (2005) and Storper and Scott (2009), for example, point out that other factors, such as labour market opportunities, prevail.

Despite some criticism (see Bontje and Musterd, 2009) “bohemians” have been acknowledged as an important asset within cities and regions; however, very little attention has been given in the literature to their specific migration patterns. Therefore, in this paper we focus specifically on understanding the migration of skilled (high human capital) individuals in these core cultural occupations identified by Florida (2002a).

In particular, we study the migration behaviour of a specific segment of the creative class, which we call, following Comunian et al. (2010), “Bohemian graduates”. Although the term “Bohemian graduates” might sound like a contradiction in terms, it has been used extensively in previous literature (Comunian et al. 2010, 2011, 2014; Comunian and Faggian 2011; Abreu et al. 2012; Faggian et al. 2013) to define graduates who hold a higher education degree in a “creative” academic discipline (as defined by Comunian et al. 2010). The peculiarity of these graduates is that they combine high human capital (a university degree) with a more “artistic” creative side (having studied “artistic subjects” as defined by Florida 2002c). While the term “bohemian” has an historical connotation in the literature as

referring to alternative lifestyle choices (Murger, 1988) , it has been used more recently to capture a series of occupation and professional profiles (Currid, 2009; Florida, 2002a). It is in relation to this latter work that "bohemian" is also used in this paper. As argued by Comunian et al. 2010, using this term offers the advantage of bridging across two sets of literatures: the one on cultural and creative work and the one on human capital, therefore contributing to a broader discussion about the role of creative and cultural work in local development. Therefore, we compare the migration behaviour of this group with those of other groups of high-human capital individuals (i.e. other graduates) in more traditional subjects which range from humanities to scientific (STEM) subjects. Furthermore, following the work by Abreu et al. (2011), who show the precarious working conditions of Bohemian graduates, we also try to assess whether migration is beneficial to Bohemian graduates and improves their chances of getting a better job post-graduation.

The paper is organized as follows. Section 2 reviews the current literature, specifically looking at graduates and skilled migration. Within this broader literature, we consider more specifically the creative class theory and the more recent focus on creative occupations and skills. After discussing data and methodology in Section 3, we present and discuss the results in Section 4. Section 5 concludes and presents some ideas for future research.

2. Theoretical background: from graduate and skilled migration to the creative class

2.1The importance of graduate migration and human capital

The importance of human capital for economic growth and development has long been recognised. The link between human capital and growth was formalised by Lucas (1988) in what became a very well-known model of endogenous growth. However, what most

theoretical models overlook is the role of migration of highly skilled individuals. There is often an assumption that the region under investigation is a closed system, but states, and even more so regions within a state, are open systems that continuously exchange goods and individuals. The success of a region is highly dependent on the balance of the trade of these goods and individuals. Hence, an understanding of the factors determining the migration behaviour of individuals, especially if highly skilled and educated, is crucial.

However, studying the migration behaviour of highly skilled individuals is not an easy task. Until recently, sophisticated micro-data on highly skilled and educated individuals were not available and most studies focused on the relationship between human capital and productivity at a more aggregate level, mainly cities or regions (Andersson et al., 2009; Elvery, 2010; Glaeser and Resseger, 2010). A few exceptions have appeared recently thanks to the availability of detailed micro-individual data for certain countries (Faggian et al. 2006, 2007 and Faggian and McCann 2009 for the case of Great Britain; Venhorst et al. 2010 and 2011 for the Netherlands; Bjerke 2012 for Sweden; Coniglio and Prota 2008 for the case of Basilicata in Italy).

This paper uses micro-data on individual graduates to study their "sequential migration behaviour" and migration propensity, with a special focus on graduates from creative disciplines. To classify the migration behaviour of graduates we follow Faggian (2005), who divides graduates into five categories (in descending order of migration propensity): repeat migrants, return migrants, university stayers, late migrants, and non-migrants. Section 3 provides a more detailed description of these categories and how they are constructed. Faggian (2005) shows that the most mobile group of graduates, i.e. repeat migrants, has an average salary advantage of about 4.5% when entering the labour market, but no university

subject/major break-down is reported. She also shows that graduates from the Arts & Humanities faculty are more likely to migrate back home after graduation (i.e. being 'return migrants' a la DaVanzo, 1976) rather than move on towards a different job location. However, it is unclear whether return migration represents a "corrective" movement or a rational behaviour which allows these graduates to maximise their salaries and find a better job. Moreover, the breakdown of subject/major at the college or 'faculty' level is far too wide and requires refinement.

2.2 Bohemians, creative class and creative workers in local development

The popularity of the 'creative class' concept (Florida, 2002c) amongst academics and policy makers has also been a source of controversy; especially as Florida (2002c) linked it to the ability of different cities to retain and/or attract creative professionals. While Florida saw it as an alternative, and better, way of defining the skills and talent of workers, some researchers saw little or no value in this new concept. Economists such as Glaeser (2005) prefer the traditional "human capital" concept over the new notion of creative class and point out that regional growth is the outcome of a very highly educated workforce rather than a "creative" one in the Floridian sense. In his review of Florida's book *The Rise of the Creative Class* published in 2005, Glaeser shows that the effect of creativity on regional growth becomes insignificant once controlling for the education level of the working population.

The term "Bohemian" has also sparked new debate in the literature. Florida (2002a) provides a good overview on the development and understanding of the concept in relation to economic geography. "Bohemians" were traditionally viewed as people who favour more

libertine lifestyles (see Bell, 1976) and in general refuse middle-class (bourgeois) conventions (Murger, 1988). However more recently) the term 'bohemian' (with new alterations such as as neo-bohemia or "bobos") has been expanded to encompass a broader artistic but also economic driven category of workers (Brooks, 2000; Eikhof and Haunschild, 2006; Leadbeater and Oakley, 1999; Lloyd, 2002).

While in the earlier interpretation of the literature, Bohemians represented a lifestyle rather than an occupational category, in the more recent use there is a stronger connection between "Bohemians" and specific cultural and artistic occupations, with "a growing integration of bohemian symbols and culture into mainstream economic activities" (Florida, 2002a, p.57). This association between the term "Bohemian" and specific occupations is taken further by Florida who includes in this more "artistic" part of the "creative class" "authors, designers, musicians and composers, actors and directors, craft-artists, painters, sculptors, artist printmakers, photographers, dancers, artists, performers and related workers" (p. 59). The way these occupational categories overlap (or not) with specific lifestyles can be questioned. Nevertheless, as the term captures core cultural and creative occupations, it also offers the opportunity to reconcile the USA focused "creative class" concept with the "creative industries" framework used in the UK (Comunian et al., 2010). Furthermore, as the DCMS[1]-defined creative industries in the U.K. are a "highly educated" sector (NESTA, 2003)[2], it also captures the strong overlap between (high) human capital and creative occupations within the broader literature on creative industries and creative work (Banks and Hesmondhalgh, 2009).

[1] The Department of Culture, Media and Sport (DCMS) was established in 1998

[2] With 43% of the employees having a tertiary degree qualification or higher - compared to an average of 16% for the workforce as a whole (NESTA, 2003)

While most economists would agree that "creativity" (especially in its wider understanding, often overlapping with innovation and research & development), and the "creative class" in general, plays a vital part in fostering national and economic development, there is still some scepticism regarding the role that "Bohemians" and "creative industries" play in the overall economy (Comunian, 2009).

In particular, some criticisms focused on the differences and heterogeneity of the creative class as an all-encompassing group of professions and the core cultural occupations identified as "Bohemians". Markusen (2006) criticized the concept for its fuzzy nature. In fact, these professions are likely to have a very different effect on regional development and, as Abreu et al. (2012) show, are rewarded very differently in the labour market. This is also explicitly acknowledged by Florida et al. (2008) who recognise that "there is good reason to believe that some occupations and specific types of skill play a relatively larger role in regional development" (page 19) and define ten sub-groups of the creative class[3].

In addition, Comunian et al. (2010) argue that the concept of creative class is "too broad to enable a meaningful empirical analysis" and that each main sub-component should be analysed separately. In particular, the "arts, design, entertainment, sports and media" sub-component, which has been referred to as "Bohemians" (Florida 2002c), seems to be the one which differs the most from the others sub-groups both in terms of the role that it plays in economic growth and in terms of how it is treated in the labour market. Therefore, it should always be studied separately from the other sub-components.

In this paper, we retain the use of the term "Bohemian" in reference to the group of graduates undertaking arts- and cultural-based degrees not only because it is consistent

[3] These sub-groups are: 1. Business and financial operations, 2. Computer and mathematical occupations, 3. High end sales and sales management, 4. Arts, design, entertainment, sports and media, 5. Management, 6. Architecture and engineering, 7. Legal, 8. Life, physical and social sciences, 9. Healthcare and 10. Education and Training.

with previous analyses (Comunian et al. 2010, 2014; Comunian and Faggian, 2011; Faggian et al. 2013; Abreu et al. 2012) but because the term meaningfully captures some of the contradictions and criticalities present in the literature about the role of creative work in local economic development. In fact, on one hand, the term "Bohemian" has been used as a marketing tool by policy makers to promote upcoming areas, attracting new professionals and instigating gentrification processes at the expenses of cultural workers (Mathews, 2010; and Currid, 2009); on the other, it captures the unstable career and precarious lifestyle of individuals who want to pursue creative and cultural occupations, as shown by others (Abreu et al., 2011; Gill and Pratt, 2008; Ross, 2006) . The paper aims to bring together these two perspectives, highlighting the connections between discourses of mobility and attractions behind local marketing campaigns and individual career strategies and opportunities identified by graduates who want to work in this sector.

Obviously, central to the debate on creativity – especially to more peripheral areas - is the assumption that creative people are highly mobile and that locations with certain characteristics can attract them. However, while most of the contributions focus on the debate of whether labour market characteristics or amenities are more important in attracting them (e.g. Scott, 2010), only a handful of contributions question the fundamental assumption that creative people are in fact highly mobile.

Olfert and Partridge (2011), studying the case of Canada, find that the metropolitan employment shares of workers in cultural occupations (which represent a sub-group of the creative class) are persistent and not particularly sensitive to various explanatory variables. They conclude that it might not be possible to create desirable conditions to attract the creative class via urban or rural policy and practice.

Hansen and Niedomysl (2009) studying the case of Sweden, find that highly educated people are as mobile as the rest of the population. Given that, as Hansen (2007) shows, the education level can be used in Sweden as a valid proxy for whether an individual belongs to the creative class (with a correlation between the two of 0.94), they conclude that there is no evidence that creative people are more mobile. Similarly, Borén and Young (2013), studying specifically the case of artists in Sweden, also question the assumption of high mobility of creative workers. They point out that networks are vital for artists and that once artists are "embedded in their networks…it (is) more difficult for them to migrate" (p. 207). They also caution about reducing the migration histories of artists to a "simplistic set of assumptions" (p.207) as the migration dynamics of creative occupations are very heterogeneous.

Verdich (2010) does not directly tackle the migration propensity of creative workers, but rather examines the issue of what factors attract them to more peripheral locations. She also, as Borén and Young (2013), cautions against a one-size-fits-all approach when studying artists' migration, showing that in some cases artists can be attracted to more rural locations, such as her case study, Launceston in Tasmania, where the "small scale is perceived as a safe haven to escape the rat race of the city" (p. 139).

Bennett (2010), also studying the migration of artists – for the case of Western Australia - finds that employment opportunities do play a role in attracting them (in accordance with the findings of Hansen and Niedomysl, 2009 for Sweden). However, she also finds that the move is "rarely the result of securing a position" (p.125) making migration very risky financially.

The lack of a more extensive literature directly tackling the migration propensity of the creative class might be related to the fact that there is a strong association between belonging to the creative class and being highly educated, and there is plenty of evidence that high human-capital individuals are highly mobile (Faggian and McCann, 2009; Faggian et al., 2006; Faggian et al., 2007). However, the overlap between being creative and being highly educated is not absolute and therefore studying the migration behaviour of creative people specifically is important in order to devise suitable public policies. In our contribution we analyse the migration behaviour of the creative class focusing specifically on the more artistic, more educated sub-component of it which we name, following Comunian et al. (2010), 'Bohemian graduates'.

Research in the UK (NESTA, 2003) has highlighted how creative workers are a highly educated group. Therefore, studying Bohemian graduates can offer an opportunity to capture dynamics of employment and mobility for this sub-sector of the creative class. In particular, it is important to study this group of graduates for two reasons; firstly, they combine both creativity and human capital and they are not only part of the creative class but they are also a key indicator of the "quality of place" (*a la* Florida) that might contribute to the attraction/retention of further creative professionals. Their location choice and migration patterns are therefore important from a local/regional development perspective; secondly, previous studies (Comunian et al., 2011; Comunian et al., 2010; Faggian et al., 2012), have shown that Bohemian graduates experience specific career patterns often characterised by lower salaries and unstable working conditions. Contributing to this body of work we consider how migration might provide a coping strategy for Bohemian graduates to respond to uncertainty and career opportunities.

Finally, it is important to consider that specific geographical locations can play an important role in the career and job opportunities of creative professionals (Reimer et al., 2008). Comunian and Faggian (2011) show the importance of location for creative graduates (in relation to creative cities) and the importance that locating in a "creative city" might have in providing them with opportunities to enter creative occupations.

3. Data and Methodology

Our main source of data is the UK Higher Education Statistical Agency (HESA). HESA annually collects comprehensive data on students and graduates in higher education institutions (from now on referred to as HEIs). In this study we focus on the cohort of students who graduated in the academic year 2006/07 and combine two different HESA data streams: the "Students in Higher Education Institutions" (Students in HEIs) stream and the "Destinations of Leavers from Higher Education" (DLHE).

The 2006/07 "Students in HEIs" dataset includes records on 2,362,815 students in all the UK HEIs (169 institutions overall), which constitutes the population of all UK HEI students for that academic year. For each student a wide range of information is collected including personal characteristics (such as age, gender, ethnicity), course characteristics (such as subject studied at 4-digit Joint Academic Coding System (JACS) code[4], mode of studying (namely, full-time or part-time), institution attended, final grade achieved for graduates, and, more crucially for the scope of this paper, the location of parental domicile (at unit postcode level) before entering university.

[4]For more information on the Joint Academic Coding System (or JACS) see URL: http://www.hesa.ac.uk/index.php?option=com_content&task=view&id=158&Itemid=233.

The DLHE database contains information on graduates' employment circumstances six months after graduation and includes salaries, employer Standard Industrial Classification (SIC) code (4-digit), job based on Standard Occupational Classification (SOC) code (4-digit) and importantly, the location of employment (at unit postcode level). Although six months is a relatively short period after graduation, it has been shown that there is a strong relationship between how well graduates perform in the short– and long-term (Elias et al. 1999, McKnight, 1999). However, we do recognise that different graduates experience different career patterns and graduates from less vocational degrees might take longer to develop their career. In the case of "Bohemian graduates", Abreu et al. (2012) find that the labour market disadvantages experienced six months after graduation persist even after three and a half years.

Although the DLHE survey covers both full-time and part-time UK and other EU- domiciled graduates, for the purpose of current study, we only include the UK-domiciled graduates (for whom we have postcodes and can easily calculate interregional migration patterns). This leaves us with a total of 324,510 observations (with a response rate of 78.9% for full-time graduates and 71.1% for part-time graduates). After merging the two data streams, our final database contains 203,469 valid cases, i.e. with no missing values on the information needed for the analysis. Our database includes 166,647 graduates (81.9%) in full-time in paid employment, 27,875 graduates (13.7%) employed part-time in paid work, 6,642 graduates (3.26%) self-employed[5] (or working freelance) and 2,305 (1.13%) graduates employed in voluntary work or other unpaid work.

[5] Following the suggestion of one of the reviewers who highlighted the importance of freelance work in the creative industries within the data analysis, it is important to point out that out of 23,552 Bohemian graduates, 11.2% (2,640) were freelancing 6 months after graduation, which is a higher proportion than the average of

Our definition of "Bohemian graduates" follows directly from the theoretical framework presented in Comunian et al. (2010) and it includes all students who graduated in the following subjects (identified by the JACS subject codes):

1. *Arts and design*: all JACS codes starting with W;
2. *Media*: JACS codes starting with P;
3. *Others*: Multi-media Computing Science (JACS code G450); Software Engineering (G600); Software Design (G610); Audio Technology (J930); Music Recording (J931); Musical Instrument Technology (J950); Architecture (K100); Landscape Design (K300).

In reference to our sample, out of 23,552 Bohemian graduates, there are 17,154 (72.83%) Arts & Design graduates, 4,435 (18.83%) Media graduates and 1,963 (8.33%) graduates with "Others" creative background. This definition broadly corresponds broadly to the "Bohemians" sub-groups of the creative class as identified in Florida et al. (2008) except that we are restricting our analysis to high-human capital Bohemians (i.e. with a university degree). As discussed in the theoretical background, there is a strong correspondence between these subjects and the "bohemian occupations" identified by Florida (as detailed in Comunian et al. 2010). We include a small (8.33%) group of tech-based graduates ("Others"), which resonate with the creative occupations as defined by DCMS (1998), as it can be argued that most of the bohemian occupations listed by Florida have a strong technology/digital base (i.e importance of software for music, design, photography, video art etc.).

3.26% across all subjects. However, when testing the multinomial logit models incorporating interaction terms between employment status and subject background, it was found that self-employment does not seem to condition the effect of being Bohemian on migration types (i.e. the interaction between self-employment and Bohemian background is largely insignificant).

Next, we classified the students according to their sequential migration. In the 3-year period that encompasses entering university and graduation (and subsequently entering the labour market), students are faced with two distinct migration decisions. The first is whether to study locally or migrate to study in a different area. The second is whether to work locally (i.e. in the university's immediate region) or make another move to enter the labour market in a different location. By combining these two choices, it is possible to identify five different migration paths or categories: repeat migrants, return migrants, university stayers, late migrants, and non-migrants.

The first three migration categories include students who all migrated to study, but they differ in regards to the second migration, following graduation. Repeat migrants are those who move to work in an area different from both their original pre-university domicile and the university region. Return migrants also move out of their university region to work, but only to go back to their original domicile. When analysing migration to study and migration to work separately, these two categories are undistinguishable as both repeat and return migrants are in fact migrating twice. Nevertheless, differentiating between repeat and return migrants is vital because the two groups might have very different characteristics (DaVanzo and Morrison, 1981; Newbold, 1997). Repeat migrants may be people who, encouraged by a successful first migration, venture upon a new migration; while return migrants are likely to be people who found the first migration to be a failure (DaVanzo, 1976; Faggian, 2005) and return home to a familiar surrounding where the network of acquaintances can help them enter the labour market. The third category, university stayers, includes all students who migrate to study, but then find a job near their university.

The last two categories, late migrants and non-migrants, include graduates with the lowest migration propensity. Late migrants study near home and only migrate once they graduate. Non-migrants, as the name suggests, are those who study and then work in the same area as their original domicile. Table 1 summarises the five categories.

>> Insert table 1 here <<

After having defined Bohemian graduates and the categories of sequential migration, our methodology followed two main steps:

1. Firstly, we used some simple descriptive statistics to profile the migration patterns of graduates and their relation with salary, with a specific focus on Bohemian graduates;

2. Secondly, we use a multinomial logit model to consider the factors affecting the sequential migration behaviour of students. This allows us to simultaneously evaluate which factors affect the sequential migration of students/graduates. Formally, the multinomial logit model can be represented as:

$$\Pr(y=m|\mathbf{x}) = \frac{e^{x\beta_{(m|b)}}}{\sum e^{x\beta_{(m|b)}}} \quad (1)$$

Equation (1) gives the estimated probabilities of a graduate belonging to a certain "sequential migration category" "m" compared to the "base category" "b" (which in our case is *non-migrant*) as a function of a series of explanatory variables (vector ***x***).

Our model includes a wide range of explanatory variables including personal characteristics (gender, age, ethnicity, domicile location), course characteristics (full-time vs. part-time education, final degree classification, subject studied), HEIs' characteristics (location, selectivity) and job characteristics (creative job vs. non creative, interaction terms between being in a creative job and subject studied).

4. Results and discussion

In this section we present the results of our analysis on the migration behaviour of Bohemian graduates vs. graduates in more traditional disciplines. We start with some basic descriptive statistics which allow us to get a better picture of any differences between the Bohemians and non-Bohemians and then present a multinomial logit model of the probability of Bohemian (*vis-à-vis* non Bohemian) graduates belonging to each of the sequential migration category controlling for a series of personal, institutional, course, and job characteristics that have been found in the literature to affect the migration propensity of individuals (for a review see Faggian et al., forthcoming). We also include regional dummies for both the location of the HEI attended and the location of the post-graduation job to account for differences across regions such as economic strength, agglomeration economies, amenities, and socioeconomic characteristics.

4.1. The migration behaviour of Bohemian graduates: some descriptive statistics

Our first step is to look at the distribution of migration categories by subject studied. As Table 2 shows, Bohemian graduates are the least likely to be late migrants. This is interesting as late migrants, as we will see, are normally students who perform the best at university and are encouraged by their success to "invest" in a migration move to find more prestigious jobs. They are also the most likely to be working around the university area, i.e. be university "stayers". Also, their most common migration pattern is return migration, i.e. studying away from the parental domicile but going back to work in their original domicile area after graduation. Chapain and Comunian (2010) highlight the attachment of creative practitioners to their cities and regions and consider whether this might be an "enabling" or "inhibiting" factor. They report both on the role of universities in embedding people in local contexts as well as the pride and sense of place developed by being "born and bred" in a specific context. Also, Drake (2003) considers that creative practitioners value a different range of assets and characteristics in their location choices. These dynamics might explain our results.

>> Insert table 2 here <<

To assess whether return migration is a "corrective" movement back home, we examine how many return migrants actually went back to the exact same postcode after graduation. Given that unit postcodes are very detailed geographical areas[6], it is very likely that going back to the same unit postcode means going back to the parental domicile. Table 3 shows

[6]There are approximately 1.78 million unit postcodes in the UK (http://www.statistics.gov.uk/geography/postal_geog.asp). Each unit postcode contains up to 100 addresses, but 15 is a more typical number, so this is a very fine spatial resolution.

that Bohemians are the most likely to go back to the exact postcode where they used to live before going to University.

>> Insert table 3 here <<

However, going back home might not be a corrective or penalising strategy. To evaluate this, we calculate how the different sequential migration strategies for different types of graduates are linked to their entry salaries in the labour market. Unfortunately, Table 4 does not portray an encouraging situation for Bohemian graduates. On average Bohemians have the lowest entry salaries among their peers. This is not surprising and is in line with previous contributions (Comunian et al., 2010, Abreu et al. 2012). However, note that the migration behaviour does make a difference.

The favourite migration pattern of Bohemians, i.e. return migration, is the one associated with the lowest mean (and median) salary, which is just above £16,000. The second lowest salary is linked with the "university stayers" category, which is another popular choice among Bohemians (see Table 1). The fact that return migration and staying around the University are the most common choices of Bohemian graduates suggest that networks and peer-to-peer support are crucial for their success, which is consistent with previous literature (Comunian, 2012; Harvey et al., 2012). Networks are helpful in developing trust to respond to the risky nature of the creative economy (Banks et al., 2000). On the opposite, late migration (which is low among Bohemians) is the strategy with the highest monetary reward. It seems that, contrary to graduates in other disciplines, Bohemians do not choose a

migration pattern to maximise their economic rewards in the labour market. Other dynamics – as pointed out above – might be at work.

One possible cause of this behaviour might be that Bohemians face a much tougher challenge in finding a suitable job soon after graduation and need therefore to go back to the parental area to have some kind of familial support while they become more "established". The role played by family support is recognised in the literature on creative work/careers (Ball et al., 2010; NESTA, 2008). The reputation effect is fundamental for these graduates and requires them to settle for less than optimal jobs initially in the hope of landing a better job later in their career development, especially while building a portfolio or developing their individual practice (Blackwell and Harvey, 1999; Blair, 2000).

>> Insert table 4 here <<

Although return migrants move twice and hence are similar to repeat migrants in this respect, they do not fare well in the labour market and, in fact, they are at the opposite of the spectrum in terms of salaries and labour conditions. Table 5 shows the percentage of graduates in non-graduate jobs by migration type and degree classification (i.e. their final mark at graduation). Because the final mark is a proxy for human capital, there is an expectation that graduates with the best final grade are more likely to find a graduate-level job. However, what is worth noticing is that their migration behaviour also plays an important role. Repeat migrants and late migrants, i.e. graduates who are willing to move to find a job after graduation, are on average twice as likely to enter a graduate job. Only about 12% of repeat and late migrants with a first degree classification end up in non-graduate jobs vs. almost 30% of return migrants.

>> Insert table 5 here <<

If we now control for the subject studied in combination with the final degree classification, we get, maybe unsurprisingly, the usual "gloomy" picture for Bohemians. Irrespective of their final mark, Bohemians are the most likely to have to settle for non-graduate type jobs (Table 6). Around 29% of graduates with a "first" final grade in a Bohemian subject enter a non-graduate job. Even for postgraduates the percentage is quite high (11%). Health graduates and graduates from STEM subjects (Science, Technology, Engineering and Mathematics) are the more likely to find a graduate job upon graduation, even though the final mark is more important for STEM graduates than for health graduates (maybe due to the high demand of graduates in this sector).

>> Insert table 6 here <<

All in all the results presented in Tables 5 and 6 confirm that the combination of a Bohemian subject with return migration is associated with the highest penalty in the labour market.

4.2. Factors affecting the sequential migration behaviour of students: a multinomial logit model

Although the descriptive statistics presented in the previous section gave us some useful insights into the sequential migration behaviour of Bohemian *vis-á-vis* non-Bohemian

graduates, they did not shed any light on the factors affecting the migration decisions of students and graduates.

Table 7 reports the result of the multinomial logit model in equation (1).The results are presented in terms of odds ratios rather than coefficients, because of their more intuitive nature. An odds ratio above 1 means that the associated explanatory variable increases the chances of being in that particular sequential migration category. Regional dummies for the location of the HEI attended and the first job location are not reported to save space[7], but the main trends will be briefly highlighted in the discussion of the results.

>> Insert table 7 here <<

"return migration" and "staying around the university" are the two preferred migration choices of Bohemians (contrary to other graduates). This confirms the patterns of the descriptive statistics and holds true despite controlling for a wide range of explanatory variables. Bohemian graduates are 37% more likely to belong to the "university stayers" category and about 11% more likely to be "return migrants". This is in stark contrast with graduates from more scientific subjects. Engineers and technology graduates, for instance, are more than twice as likely to be late migrants and 72% more likely to be repeat migrants, while being at the same time 16% less likely to be return migrants. Computing and Mathematics, and Science graduates are also more likely to be late migrants and so are

[7] Full results are available from the authors upon request.

business and management students (about 20% more likely). Education students, however, are more likely to belong to the more non-migrants category.

We also controlled for the type of job the graduates found and in particular whether they entered a "creative" or "non-creative" occupation as defined by the DCMS (2009)[8]. The results indicate that entering a creative job does encourage graduates to migrate as the coefficients on repeat and late migrants are now positive and significant. This holds true also when we specifically examine Bohemian graduates as indicated by the interaction term. Bohemian graduates who manage to enter a creative occupation are 19% more likely to be repeat migrants and 32% more likely to become late migrants (even though the coefficient is only significant at 10% level).

Although this what not the focus of the paper, some results on the control variables are also worth mentioning. First of all, most of the results on the personal characteristics of graduates are in line with what found in the literature. Starting from the gender effect, female graduates are more likely than their male counterparts to be non-migrants, as are graduates belonging to ethnic minorities (as in Faggian et al. 2006 and 2007). Young graduates are more likely to be mobile after graduation (i.e. repeat or late migrants) as predicted by the human capital investment theory (Becker, 1964). Conversely, return migrants tend to be older. Also in line with the human capital migration theory (Sjaastad, 1962), "better" graduates (i.e. with a higher final degree classification) tend to be more migratory (i.e. repeat or late migrants) and are less prone to return home after graduation. The same applies for graduates from older HEIs (normally ranked higher in the league

[8] For more details on the definition of creative occupations see Comunian et al. (2010).

tables), while graduates from "new" HEIs tend to be non-migrants, i.e. coming from the local area and staying in the local area to work after graduation (also in line with previous literature, such as Faggian and McCann 2009, which stresses that "new" HEIs cater more for "local" students).

Although we do not show all the set of results on the domicile and HEIs regional dummies, some results deserve to be pointed out. Students who were initially domiciled in London are less likely to be repeat migrants, as they have plenty of possibilities both for studying and working in their local areas. Students from regions around London (especially the South East and South West) are more likely to become late migrants, i.e. studying at home but then moving away after graduation, usually to the Greater London area. As for the location of HEIs, the HEIs which manage to attract and then retain graduates in the local area are located in Scotland, Yorkshire and the South West. It would be worth investigating this further, as it is difficult to see a clear commonality between these regions or identify a strong reason for this pattern without more detailed research.

5. Conclusions, policy implications and further research

Despite the stark criticism it received, the concept of creative class has the undoubted advantage of having created a new "buzz" around the concept of creativity and having attracted a large amount of attention not only in academia[9] but also among policymakers. The latter seem to have embraced the concept with enthusiasm (Leslie, 2005) and many policies now around the world refer to creativity and its role in regional development not

[9] The academic articles by Florida produced over 1,800 ISI citations (almost 300 of them post-2002). His two most famous books published in 2002 and 2005 are cited in Google Scholar over 4,000 times.

only of large urban areas but also of more peripheral ones (McGranahan et al., 2011). In particular, within the broader creative class theory, the role played by "bohemians" as core cultural producers has been celebrated and often used as promotional marketing tool (Currid, 2009; Peck, 2005). However, in this paper, using "Bohemian graduates" data, we argue that in order to better inform policy more research is needed to understand the career patterns of "bohemians" and how mobility influences their work and the possibility of establishing a sustainable livelihood through creative work.

The findings from the paper highlight that, while the mobility of highly skilled labour is key to a better understanding of regional development and growth (Florida et al., 2008; Trippl and Maier, 2007), a more refined understanding of the different types and characteristics of mobility is needed. Specifically, the paper focused on UK graduates using HESA data and presented key differences in migration behaviours between graduates in different subjects.

Our results confirm the high level of mobility of UK graduates but also show the different (and limited) mobility of "Bohemian graduates". The initial low salary level and cost of living considerations might push these graduates to return home (at least initially) to afford pursuing a career in their chosen field of study. Although being closely interconnected with specific career patterns experienced by Bohemian graduates and identified by previous literature (Comunian et al., 2011; Comunian et al., 2010; Faggian et al., 2012), our results also point to further questions and policy implications. In particular: if Bohemian graduates experience limited mobility compared to other graduates, what are the implications for attracting and retaining them and fostering the right "people climate" to support the broader creative class *à la* Florida? Secondly, in which way does the limited mobility affect or influence their career opportunities and economic performance? Thirdly, how does the

limited mobility of Bohemian graduates relate to the concept of the "creative city" (Comunian, 2011) and the importance of location in the creative economy?

As far as the first question is concerned, developing new higher education institutions and opening new creative subjects' degrees might be a strategic policy intervention for cities and localities interested in fostering the creative and diverse climate that might attract other creative professionals. There are some case studies discussed in Comunian and Faggian (2011) – such as Folkestone – which exemplify this kind of policy intervention. The propensity of Bohemian graduates to be "university stayers" is a key finding and it could be used more strategically by higher education institutions and local authorities. Furthermore, it can be argued that establishing links between higher education institutions, local policy and the creative industries might develop a more grounded local development strategy based sustainable patterns of collaborations and development rather than short-term boosterism (Comunian et al., 2013).

The second question is much more complex and requires further research (and new data). It would be important to understand the motivations behind the "return migration" and the "university stayers" strategies. In line with previous work (Comunian et al. 2010; Faggian et al. 2013) the paper highlights the relationship between lower financial opportunities for "bohemian graduates" and links these findings to possible mobility dynamics or coping strategies. These findings suggest the need to reflect on individual motivations and micro-circumstances and livelihoods within the macro discourses of attraction and retentions policies tools *à la* Florida. Mobility and migration could be also read as strategies for resilience for bohemian graduates trying to enter a creative career and more research is needed on the difference between short-term and long-term mobility.

The third question opens up to a broader set of reflections about the ability of different places to attract and retain "bohemian graduates". Knell and Oakley (2007) highlight the role played by London in the UK creative economy, while Comunian and Faggian (2011) consider how much the success and concentration of creative work in London depends and interconnects with the concentration of higher education institutions and specialised (in creative subjects) higher education institutions in the capital. This concentration strongly determines the creative careers of graduates as "bohemian graduates working in creative occupations are twice as likely to be in London as non-Bohemian graduates working in non-creative occupations" (Comunian et al. 2010, p. 401) and therefore could be responsible for migration patterns of Bohemian graduates towards London, reinforcing further its image and performance as a creative city. Supporting the arguments of Comunian and Faggian (2011) linking the geography of higher education to the understanding of the creative city and its policies, the current findings suggest the importance of the migration patterns and dynamics that connect higher education and local (or distant) creative economies.

One limitation of the data is in the inability to account for the importance of networks, and connected migration patterns, among the mobility dynamics. The fundamental role of networks for creative careers has been widely acknowledged (Borén and Young, 2013) and a follow-up study - of a more qualitative nature - focusing on how the networks developed in a specific locality are the main reason for staying rather than moving would be really interesting.

The time-horizon of our research could also be extended by looking at the more recent "Longitudinal Destinations of Leavers from Higher Education" database (LDLHE) – also by HESA – which includes information on job experience three and a half year after graduation. However, the longer timeframe comes at the expense of a much smaller sample size. While

Abreu et al. (2012) find that the labour market disadvantages experienced six months after graduation persist even after three and a half years, it would be interesting to consider how mobility affects this picture and whether repeat migration or the development of long-term networks provide different forms of advantage or disadvantage in the longer term period. Finally, one point worth mentioning is that our findings show that assuming high human capital individuals (i.e., graduates) are highly mobile is misleading. There are obvious differences based on the subject studied (and subsequent career) and our contribution only scratched the surface of what could be an interesting and prosperous line of research.

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